

REMARKS

Claim 1 has been amended to clarify the invention. No new matter is included. Applicant respectfully requests entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

Rejection Under 35 U.S.C. § 112, first paragraph

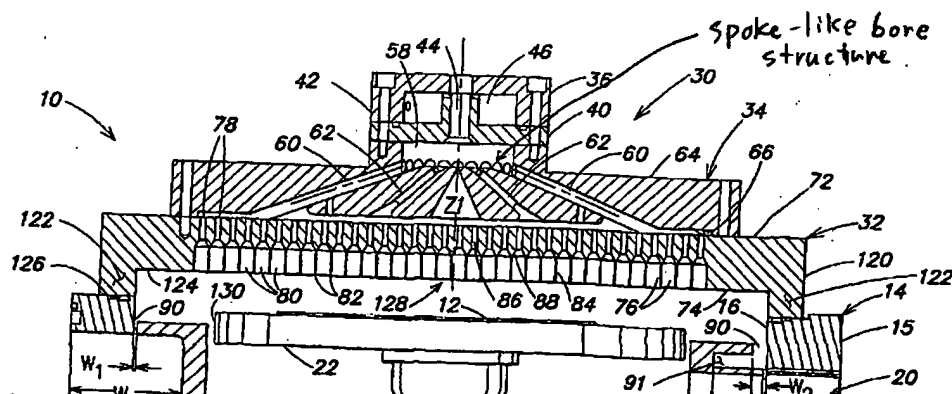
Claims 1-11 and 22-24 were rejected under 35 U.S.C. § 112, second paragraph, which has been withdrawn in the Advisory Action.

Rejection of Claims 1-7, 9-11, and 22-24 Under 35 U.S.C. § 103

Claims 1-7, 9-11, and 22-24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over US 5,447,568 (Hayakawa) and US 5,785,796 (Lee) in view of Vincent US 20030019428A1 (Ku). Claim 1 is independent and has been amended to clarify the invention. Applicant respectfully traverses this rejection.

Claim 1 now recites: a vaporization surface which is a convex surface facing the ceiling of the reaction chamber, having a center under the orifice, and extending toward a periphery of the shower plate.

The Examiner asserts: "Ku teaches an upper plate (34; Figure 1) with conical surfaces (60, 62, 71; Figure 1)." However, contrary to the Examiner's assertion, Ku does not teach conical surfaces. Numerals 60, 62 in Ku are "passages that extend radially from the center axis of the dispersion plate 34" (paragraph [0046] on page 4) and Figures 1 and 4 clearly show that passages 60, 62 are bores or holes (Figure 1 shows circles indicating cross sections of the passages 60, 62 in the entrance 58, see below).



The bores or holes radiate in an outward direction like spokes, but they do not constitute a convex surface or conical surface. Unlike the claimed invention, Ku gives absolutely no indication of a convex surface facing the ceiling of the reaction chamber, having a center under the orifice, and extending toward a periphery of the shower plate. Further, in Ku, the dispersion plate (34) receives dilute process gas (not liquid) output from the mixing fixture (36) (paragraph [0046]).

In contrast, in Claim 1, the convex surface faces the ceiling of the reaction chamber, has a center under the orifice, and extends toward a periphery of the shower plate, and by using the extended convex surface, a liquid material can efficiently be vaporized in the reaction chamber prior to the shower plate. The above features could not be obvious over Ku. Further, as the Examiner admits, Hayakawa and Lee do not teach the above features.

Thus, even if the teachings of Hayakawa, Lee, and Ku are combined, the combination could not render Claim 1 obvious.

Further, none of Hayakawa, Lee, and Ku teaches an evaporation plate for vaporizing a liquid material in the space between the ceiling of the reaction chamber and the shower plate. As recited in Claim 1, the evaporation plate is for vaporizing the liquid raw material which flows on the vaporization surface. The Examiner asserts: "if the prior art structure is capable of performing the intended use, then it meets the claim." Hayakawa, Lee, and Ku each teach a gas-recitifying plate (although referred to as a "recitifying plate (3306)" in Hayakawa, "partition plate (94)" in Lee, "dispersion plate (34)" in Ku) through which a gas (not a liquid) passes. It is common technological knowledge in the art that a liquid material cannot be introduced directly into a gas-recitifying plate, and no liquid material could be used by causing the liquid material to flow on a surface of the gas-recitifying plate.

In view of the above, Claim 1 could not be obvious over the above references, and at least for this reason, the remaining dependent claims also could not be obvious. Applicant respectfully requests withdrawal of this rejection.

Rejection of Claim 8 Under 35 U.S.C. § 103

Claim 8 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayakawa, Lee, Ku in view of Strang. Claim 8 depends from Claim 1. Strang is irrelevant to the features of Claim 1. Thus, a combination of the above references could not render Claim 1 obvious, and at

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least for this reason, Claim 8 also could not be obvious. Applicant respectfully requests withdrawal of this rejection.

CONCLUSION

In light of the Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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